

SUPPLEMENTARY MATERIAL

Laterality of Brain Activation for Risk Factors of Addiction

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Article I. Studies included in data analyses

Section 1.01 Go/No-Go

Asahi S, <i>et al.</i>	Eur Arch Psychiatry Clin Neurosci	2004
Borgwardt SJ, <i>et al.</i>	Biol Psychiatry	2008
Garavan H, <i>et al.</i>	Proc Natl Acad Sci U S A	1999
Goghari VM & MacDonald AW	Brain Cogn	2009
Goldstein M, <i>et al.</i>	Neuroimage	2007
Horn NR, <i>et al.</i>	Neuropsychologia	2003
Liddle PF, <i>et al.</i>	Hum Brain Mapp	2001
Norman AL, <i>et al.</i>	Drug Alcohol Depend	2011
Passamonti L, <i>et al.</i>	Neuroimage	2008
Passamonti L, <i>et al.</i>	Biol Psychiatry	2006
Rothmayr C, <i>et al.</i>	Neuroimage	2011
Rubia K, <i>et al.</i>	Psychopharmacology (Berl)	2005
Rubia K, <i>et al.</i>	Hum Brain Mapp	2006
Steele VR, <i>et al.</i>	Behav Brain Res	2013
Wager TD, <i>et al.</i>	Neuroimage	2005

Section 1.02 Stop Signal

Aron AR & Poldrack RA	J Neurosci	2006
Boecker M, <i>et al.</i>	Hum Brain Mapp	2011
Cai W and HC Leung	PLoS One	2011
Chamberlain SR, <i>et al.</i>	Biol Psychiatry	2009
Chevrier AD, <i>et al.</i>	Hum Brain Mapp	2007
Congdon E, <i>et al.</i>	Biol Psychol	2009
Galvan A, <i>et al.</i>	Neuropsychopharmacology	2011
Jahfari S, <i>et al.</i>	J Neurosci	2011
Li CS, <i>et al.</i>	J Neurosci	2006
Padmala S & Pessoa L	Neuropsychologia	2010
Rubia K, <i>et al.</i>	Neuroimage	2003
Sharp DJ, <i>et al.</i>	Proc Natl Acad Sci U S A	2010

Section 1.03 Alcohol

Cyders MA, <i>et al.</i>	Alcohol Clin Exp Res	2014
Grusser SM, <i>et al.</i>	Psychopharmacology (Berl)	2004
Myrick H, <i>et al.</i>	Neuropsychopharmacology	2004
Myrick H, <i>et al.</i>	Arch Gen Psychiatry	2008
Myrick H, <i>et al.</i>	J Clin Psychopharmacol	2010
Park MS, <i>et al.</i>	Alcohol Alcohol	2007
Seo D, <i>et al.</i>	Hum Brain Mapp	2011
Sjoerds Z, <i>et al.</i>	PLoS One	2014
Tapert SF, <i>et al.</i>	Addict Behav	2004
Tapert SF, <i>et al.</i>	Arch Gen Psychiatry	2003
Vollstadt-Klein S, <i>et al.</i>	Addiction	2010
Wrage J, <i>et al.</i>	Neuroimage	2007

Section 1.04 Nicotine

Bourque J, <i>et al.</i>	Front Psychiatry	2013
Brody AL, <i>et al.</i>	Biol Psychiatry	2007
Franklin T, <i>et al.</i>	Arch Gen Psychiatry	2011
Goudriaan AE, <i>et al.</i>	Addict Biol	2010
Hartwell KJ, <i>et al.</i>	Addict Biol	2011
Kang OS, <i>et al.</i>	Prog Neuropsychopharm & Biol Psychiat	2012
Ko CH, <i>et al.</i>	J Psychiatr Res	2009
Lee JH, <i>et al.</i>	Appl Psychophysiol Biofeedback	2005
Luijten M, <i>et al.</i>	Neuroimage	2011
McBride D, <i>et al.</i>	Neuropsychopharmacology	2006
McCleron FJ, <i>et al.</i>	Psychopharmacology (Berl)	2009

McCleron FJ, <i>et al.</i>	Neuropsychopharmacology	2008
Smolka MN, <i>et al.</i>	Psychopharmacology (Berl)	2006
Stippekohl B, <i>et al.</i>	Neuropsychopharmacology	2010
Tang DW, <i>et al.</i>	Neuroimage	2012
Vollstadt-Klein S, <i>et al.</i>	Addict Biol	2011
Westbrook C, <i>et al.</i>	Soc Cogn Affect Neurosci	2013
Wilson SJ, <i>et al.</i>	Nicotine Tob Res	2005

Section 1.05 Cocaine

Elton A, <i>et al.</i>	Addict Biol	2014
Garavan H, <i>et al.</i>	Am J Psychiatry	2000
Goudriaan AE, <i>et al.</i>	Addict Behav	2013
Kilts CD, <i>et al.</i>	Am J Psychiatry	2004
Risinger RC, <i>et al.</i>	Neuroimage	2005

Section 1.06 Heroin

Li Q, <i>et al.</i>	Addict Biol	2014
Tabatabaei-Jafari H, <i>et al.</i>	J Addict Med	2014
Walter M, <i>et al.</i>	Addict Biol	2014
Xiao Z, <i>et al.</i>	Drug Alcohol Depend	2006
Zijlstra F, <i>et al.</i>	Drug Alcohol Depend	2009
Li Q, <i>et al.</i>	Brain Res	2012
Lou M, <i>et al.</i>	Subst Use Misuse	2012
Wang W, <i>et al.</i>	Am J Drug Alcohol Abuse	2011

Section 1.07 Marijuana

Charboneau EJ, <i>et al.</i>	Psychiatry Res	2013
Cousijn J, <i>et al.</i>	Addict Biol	2013
Filbey FM, <i>et al.</i>	Proc Natl Acad Sci U S A	2009
Goldman M, <i>et al.</i>	J Addict Med	2013
Wetherill RR, <i>et al.</i>	Psychopharmacology (Berl)	2014

Section 1.08 Food

Beaver JD, <i>et al.</i>	J Neurosci	2006
Frankort A, <i>et al.</i>	Cereb Cortex	2014
Fuhrer D, <i>et al.</i>	Obesity (Silver Spring)	2008
Holsen LM, <i>et al.</i>	Neuroimage	2005
Hommer RE, <i>et al.</i>	Hum Brain Mapp	2013
Jastreboff AM, <i>et al.</i>	Diabetes Care	2013
Killgore WD, <i>et al.</i>	Neuroimage	2003
Kroemer NB, <i>et al.</i>	Addict Biol	2013
Malik S, <i>et al.</i>	Cell Metab	2008
Malik S, <i>et al.</i>	Appetite	2011
Pelchat ML, <i>et al.</i>	Neuroimage	2004
Rothenmund Y, <i>et al.</i>	Neuroimage	2007
Scharmuller W, <i>et al.</i>	Neurosci Lett	2012
Simmons WK, <i>et al.</i>	Cereb Cortex	2005

Section 1.09 Gaming

Han DH, <i>et al.</i>	Compr Psychiatry	2011
Han DH, <i>et al.</i>	Exp Clin Psychopharmacol	2010
Han DH, <i>et al.</i>	Cyberpsychol Behav Soc Netw	2010
Ko CH, <i>et al.</i>	Addict Biol	2013
Ko CH, <i>et al.</i>	J Psychiatr Res	2009
Ko CH, <i>et al.</i>	J Psychiatr Res	2013
Sun Y, <i>et al.</i>	Behav Brain Res	2012

ALCOHOL Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	107	88	-9.7
Y>0	50	36	-16.3
Y<0	57	52	-4.6

EtOH (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	30	21	-17.6
Z<0	20	15	-14.3

EtOH (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	38	34	-5.6
Z<0	19	18	-2.7

EtOH (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	12	9	-14.3
Y<0	26	21	-10.6

EtOH (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	38	27	-16.9
Y<0	31	31	0.0

EtOH (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	8	5	-23.0
Z<0	4	4	0.0

EtOH (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	14	12	-7.7
Z<0	12	9	-14.3

EtOH (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	22	16	-15.8
Z<0	16	11	-18.5

EtOH (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	24	22	-4.3
Z<0	7	9	+12.5

EtOH

	LEFT	RIGHT	R-L/R+L x 100
Amygdala (X <35; Y <15; -30>Z>-10)	7	4	-27.2
Insula (X >30; Y <25; Z <15)	6	3	-33.3
Hippocampus 15< X <40; -40<Y<5; -30<Z<-10	3	5	+24.0

NICOTINE Craving

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
All	125	56	69	129	43	86	+1.6	-13.1	+11.0
Y>0	47	25	22	50	15	35	-3.0	-25.0	+22.8
Y<0	78	31	47	79	28	51	+0.1	-5.1	+4.1

NICOTINE (Y>0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	25	16	9	31	11	20	+10.7	-18.5	+37.9*
Z<0	22	9	13	19	4	15	-7.3	-38.5	+7.1

NICOTINE (Y<0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	54	24	30	47	17	30	-6.9	-17.1	0.0
Z<0	24	7	17	32	11	21	+14.3	+22.2	+10.5

NICOTINE (|X|>30)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Y>0	15	8	7	13	4	9	-7.1	-33.3	+12.5
Y<0	29	13	16	32	12	20	+4.9	-4.0	+11.1

NICOTINE (|X|<30)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Y>0	32	17	15	37	11	26	+7.2	-21.4	+26.8
Y<0	49	18	31	47	16	31	-2.0	-5.9	0.0

NICOTINE (|X|>30; Y>0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	7	5	2	8	2	6	+6.7	-42.8	+50.0
Z<0	8	3	5	5	2	3	-23.0	-20.0	-25.0

NICOTINE (|X|>30; Y<0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+(all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	20	8	12	19	7	12	-2.6	-14.3	0.0
Z<0	9	5	4	13	5	8	+18.2	0.0	+33.3

NICOTINE (|X|<30; Y>0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	18	11	7	23	9	14	+12.2	-10.0	+33.3
Z<0	14	6	8	14	2	12	0.0	-50.0	+20.0

NICOTINE (|X|<30; Y<0)

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Z>0	34	16	18	28	10	18	-9.7	-23.1	0.0
Z<0	15	2	13	19	6	13	+11.8	+50.0	0.0

NICOTINE

	LEFT (all)	LEFT (depr'd)	LEFT (sati'd)	RIGHT (all)	RIGHT (depr'd)	RIGHT (sati'd)	R-L/R+L (all)	R-L/R+L (depr'd)	R-L/R+L (sati'd)
Amygdala	5	2	3	7	2	5	+16.7	0.0	+25.0
Insula	11	7	4	7	4	3	-22.2	-27.3	-14.3
H'campus	10	5	5	9	2	7	-5.3	-42.8	+16.7

*p < .05; †p < .01; ‡p < .001

COCAINE Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	39	27	-18.2
Y>0	17	13	-13.3
Y<0	22	14	-22.2

COCAINE (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	12	8	-20.0
Z<0	5	5	0.0

COCAINE (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	14	7	-33.3
Z<0	8	7	-6.7

COCAINE (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	8	6	-14.3
Y<0	9	8	-5.9

COCAINE (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	9	7	-12.5
Y<0	13	6	-36.8

COCAINE (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	5	5	0.0
Z<0	3	1	-50.0

COCAINE (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	5	4	-11.1
Z<0	5	4	-11.1

COCAINE (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	7	3	-40.0
Z<0	2	4	+33.3

COCAINE (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	9	3	-50.0
Z<0	3	3	0.0

*p < .05; †p < .01; ‡p < .001

HEROIN Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	83	75	-5.1
Y>0	30	21	-17.6
Y<0	53	54	+1.0

HEROIN (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	18	12	-20.0
Z<0	12	9	-14.3

HEROIN (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	31	24	-12.7
Z<0	22	30	+15.4

HEROIN (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	8	9	+5.9
Y<0	19	21	+5.0

HEROIN (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	22	12	-29.4
Y<0	34	33	-1.5

HEROIN (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	6	4	-20.0
Z<0	2	5	+42.8

HEROIN (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	12	9	-14.3
Z<0	7	12	+26.3

HEROIN (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	12	8	-20.0
Z<0	10	4	-42.5

HEROIN (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	19	15	-11.8
Z<0	15	18	+9.1

*p < .05; †p < .01; ‡p < .001

MARIJUANA Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	34	31	-4.6
Y>0	14	10	-16.7
Y<0	20	21	+2.4

MARIJUANA (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	4	6	+20.0
Z<0	10	4	-42.8

MARIJUANA (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	10	11	+4.8
Z<0	10	10	0.0

MARIJUANA (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	2	6	+50.0
Y<0	7	12	+26.0

MARIJUANA (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	12	4	-50.0*
Y<0	13	9	-19.0

MARIJUANA (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	1	4	+60.0
Z<0	1	2	+33.3

MARIJUANA (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	4	6	+20.0
Z<0	3	6	+33.3

MARIJUANA (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	3	2	-20.0
Z<0	9	2	-63.6*

MARIJUANA (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	6	5	-9.1
Z<0	7	4	-27.3

*p < .05; †p < .01; ‡p < .001

FOOD Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	106	80	-14.0
Y>0	43	21	-34.4†
Y<0	63	59	-3.3

FOOD (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	25	15	-25.0
Z<0	18	6	-50.0*

FOOD (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	32	26	-10.3
Z<0	31	33	+3.1

FOOD (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	16	5	-52.4*
Y<0	30	32	+3.2

FOOD (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	27	16	-25.6
Y<0	33	27	-10.0

FOOD (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	11	4	-46.7
Z<0	5	1	-66.7

FOOD (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	16	16	0.0
Z<0	15	16	+3.2

FOOD (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	14	11	-12.0
Z<0	13	5	-44.4

FOOD (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	16	10	-23.1
Z<0	16	17	+3.0

*p < .05; †p < .01; ‡p < .001

GAMING Craving

	LEFT	RIGHT	R-L/R+L x 100
All peaks	47	46	-1.1
Y>0	16	22	+15.8
Y<0	31	24	-12.7

GAMING (Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	12	17	+17.2
Z<0	4	5	+11.1

GAMING (Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	16	6	-45.4*
Z<0	15	18	+9.1

GAMING (|X|>30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	9	10	+5.3
Y<0	11	15	+15.4

GAMING (|X|<30)

	LEFT	RIGHT	R-L/R+L x 100
Y>0	7	12	+26.3
Y<0	20	9	-37.9*

GAMING (|X|>30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	8	9	+5.9
Z<0	1	1	0.0

GAMING (|X|>30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	3	4	+14.3
Z<0	8	11	+15.8

GAMING (|X|<30; Y>0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	4	8	+33.3
Z<0	3	4	+14.3

GAMING (|X|<30; Y<0)

	LEFT	RIGHT	R-L/R+L x 100
Z>0	13	2	-73.3†
Z<0	7	7	0.0

*p < .05; †p < .01; ‡p < .001